

CLAIMS

1. A treatment composition in the form of a strip or patch for use in treating a person's teeth, comprising:

an adhesive layer comprising a substantially solid adhesive composition that has increased adhesiveness to teeth when moistened by saliva or water, said adhesive composition comprising at least one tooth adhesion agent that at least partially contributes to said increased adhesiveness to teeth; and

a treatment gel, adjacent to said adhesive layer, comprising at least one active agent, at least one tackifying agent, and a liquid or gel carrier.

2. A treatment composition as defined in claim 1, said adhesive layer being substantially flat prior to placing the treatment composition over a person's teeth and/or gums.

3. A treatment composition as defined in claim 1, said adhesive layer being curved or bent prior to placing the treatment composition over a person's teeth and/or gums.

4. A treatment composition as defined in claim 1, the treatment composition being curved in at least one of a lengthwise or widthwise direction.

5. A treatment composition as defined in claim 1, the treatment composition sized and configured so as to fit over at least a portion of a person's upper dental arch.

6. A treatment composition as defined in claim 1, the treatment composition sized and configured so as to fit over at least a portion of a person's lower dental arch.

7. A treatment composition as defined in claim 1, wherein the treatment composition is sized and configured so as to approximately terminate at or near a person's gingival margin when in use.

8. A treatment composition as defined in claim 1, said tooth adhesion agent comprising polyvinyl pyrrolidone.

9. A treatment composition as defined in claim 1, said tooth adhesion agent comprising at least one of carboxypolymethylene, polyethylene oxide, polyacrylic acid, copolymer of polyacrylic acid, polyacrylate, polyacrylamide, copolymer of polyacrylic acid and polyacrylamide, PVP-vinyl acetate copolymer, carboxymethylcellulose, carboxypropyl-cellulose, polysaccharide gum, or protein.

10. A treatment composition as defined in claim 1, said tooth adhesion agent having a concentration in a range of about 10% to about 90% by weight of said adhesive composition.

11. A treatment composition as defined in claim 1, said tooth adhesion agent having a concentration in a range of about 20% to about 80% by weight of said adhesive composition.

12. A treatment composition as defined in claim 1, said tooth adhesion agent having a concentration in a range of about 40% to about 75% by weight of said adhesive composition.

13. A treatment composition as defined in claim 1, said adhesive composition further comprising at least one humectant.

14. A treatment composition as defined in claim 1, wherein said adhesive layer has a cross-sectional thickness in a range of about 0.1 mm to about 0.5 mm.

15. A treatment composition as defined in claim 1, wherein said adhesive layer has a cross-sectional thickness in a range of about 0.5 mm to about 2 mm.

16. A treatment composition as defined in claim 1, wherein said adhesive layer has a cross-sectional thickness in a range of about 2 mm to about 3 mm.

17. A treatment composition as defined in claim 1, said adhesive composition further comprising at least one member selected from the group comprising dental bleaching agents, dental desensitizing agents, remineralizing agent, antimicrobial agents, antiplaque agents, and anti-tartar agents.

18. A treatment composition as defined in claim 1, said active agent comprising at least one member selected from the group comprising dental desensitizing agents, remineralizing agent, antimicrobial agents, antiplaque agents, and anti-tartar agents.

19. A treatment composition as defined in claim 1, said active agent comprising at least one dental bleaching agent.

20. A treatment composition as defined in claim 1, said dental bleaching agent having a concentration in a range of about 1% to about 60% by weight of said treatment gel.

21. A treatment composition as defined in claim 1, said dental bleaching agent having a concentration in a range of about 3% to about 40% by weight of said treatment gel.

22. A treatment composition as defined in claim 1, said dental bleaching agent having a concentration in a range of about 5% to about 30% by weight of said treatment gel.

23. A treatment composition as defined in claim 1, said tackifying agent comprising at least one of carboxypolymethylene, polyethylene oxide, polyacrylic acid, copolymer of polyacrylic acid, polyacrylate, polyacrylamide, copolymer of polyacrylic acid and polyacrylamide, PVP-vinyl acetate copolymer, carboxymethylcellulose, carboxypropyl-cellulose, polysaccharide gum, or protein.

24. A treatment composition as defined in claim 1, further comprising a barrier layer comprising a moisture-resistant material adjacent to an opposite surface of said adhesive layer that protects the adhesive layer and treatment gel from saliva or moisture when the treatment composition is in use.

25. A treatment composition as defined in claim 24, said barrier layer being flexible so that it will readily conform to the shape of a person's teeth when in use.

26. A treatment composition as defined in claim 24, said barrier layer comprising at least one polyolefin.

27. A treatment composition as defined in claim 26, said polyolefin comprising at least one of polyethylene, high density polyethylene, low density polyethylene, ultra-low density polyethylene, polypropylene, or polytetrafluoroethylene.

28. A treatment composition as defined in claim 24, said barrier layer comprising at least one of wax, metal foil, paraffin, ethylene-vinyl acetate copolymer, ethylene-vinyl alcohol copolymer, polycaprolactone, polyester, polycarbonate, polyurethane, polyamide, or polyesteramide.

29. A treatment composition as defined in claim 24, said barrier layer having a cross-sectional thickness in a range of about 0.025 mm to about 1.5 mm.

30. A treatment composition as defined in claim 24, said barrier layer having a cross-sectional thickness in a range of about 0.05 mm to about 1 mm.

31. A treatment composition as defined in claim 1, wherein the strip or patch is contained within a sealed package prior to use.

32. A kit for use in treating a person's teeth comprising a plurality of the treatment compositions according to claim 1.

33. A kit as defined in claim 32, further comprising a barrier layer, or a material used to make a barrier layer, that is positioned adjacent to the adhesive layer when the treatment composition is in use.

34. A method for treating a person's teeth and/or gums comprising obtaining a treatment composition according to claim 1 and placing the treatment composition over at least a portion of the person's teeth and/or gums for a desired time period.

35. A treatment strip or patch for use in treating a person's teeth, comprising:
a barrier layer comprising a moisture-resistant material; and
a treatment composition adjacent to said barrier layer comprising:

an adhesive layer having an outer surface adjacent to said barrier layer
and comprising a substantially solid adhesive composition that has increased
adhesiveness to teeth when moistened by saliva or water, said adhesive
composition comprising at least one tooth adhesion agent that at least
partially contributes to said increased adhesiveness to teeth; and

a treatment gel, adjacent to an inner surface of said adhesive layer,
comprising at least one active agent, at least one tackifying agent, and a
liquid or gel carrier.

36. A treatment strip or patch as defined in claim 35, said barrier layer and said
adhesive layer being substantially flat prior to placing the strip or patch over a person's teeth
and/or gums.

37. A treatment strip or patch as defined in claim 35, said barrier layer and said
adhesive layer being curved or bent prior to placing the strip or patch over a person's teeth
and/or gums.

38. A treatment strip or patch as defined in claim 35, said barrier layer and said
adhesive layer being curved in at least one of a lengthwise or widthwise direction.

39. A treatment strip or patch as defined in claim 35, said barrier layer being flexible so that it will readily conform to the shape of a person's teeth when in use.

40. A treatment strip or patch as defined in claim 35, said barrier layer comprising at least one polyolefin.

41. A treatment strip or patch as defined in claim 40, said polyolefin comprising at least one of polyethylene, high density polyethylene, low density polyethylene, ultra-low density polyethylene, polypropylene, or polytetrafluoroethylene.

42. A treatment strip or patch as defined in claim 35, said barrier layer comprising at least one of wax, metal foil, paraffin, ethylene-vinyl acetate copolymer, ethylene-vinyl alcohol copolymer, polycaprolactone, polyester, polycarbonate, polyurethane, polyamide, or polyesteramide.

43. A treatment strip or patch as defined in claim 35, said barrier layer comprising a thin, flexible membrane having no predefined shape, said adhesive layer having sufficiently rigidity so as to at least partially contribute to maintaining said barrier layer in the shape of a strip or patch prior to use.

44. A treatment strip or patch as defined in claim 35, said tooth adhesion agent comprising polyvinyl pyrrolidone.

45. A treatment strip or patch as defined in claim 35, said adhesive composition further comprising at least one member selected from the group comprising dental bleaching agents, dental desensitizing agents, remineralizing agent, antimicrobial agents, antiplaque agents, and anti-tartar agents.

46. A treatment strip or patch as defined in claim 39, said active agent comprising at least one member selected from the group comprising dental desensitizing agents, remineralizing agent, antimicrobial agents, antiplaque agents, and anti-tartar agents.

47. A treatment strip or patch as defined in claim 39, said active agent comprising at least one dental bleaching agent.

48. A treatment strip or patch as defined in claim 39, said adhesive layer comprising a continuous adhesive composition.

49. A treatment strip or patch as defined in claim 39, said adhesive layer comprising a plurality of discontinuous regions of said adhesive compositions.

50. A treatment strip or patch as defined in claim 39, said treatment gel covering the entire inner surface of said adhesive layer.

51. A treatment strip or patch as defined in claim 39, said treatment gel covering a portion of the inner surface of said adhesive layer.

52. A treatment strip or patch as defined in claim 51, said treatment gel comprising a plurality of spaced-apart regions of said treatment gel.

53. A kit for use in treating a person's teeth comprising a plurality of the treatment strips or patches of claim 39.

54. A method for treating a person's teeth comprising obtaining the treatment strip or patch of claim 39 and then placing the treatment strip or patch over at least a portion of the person's teeth and/or gums for a desired time period.

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55. A method of manufacturing a strip or patch for use in treating a person's teeth and/or gums, comprising:

mixing together a tooth adhesion agent and a solvent to form an adhesive composition intermediate;

removing at least a portion of said solvent from said adhesive composition intermediate so as to form an adhesive layer comprising a substantially solid adhesive composition having increased adhesiveness to teeth when moistened with saliva or water; and

placing a treatment gel adjacent to the adhesive layer,

the adhesive composition being in the form of a strip or patch.

56. A method as defined in claim 55, further comprising placing or forming a barrier layer adjacent to said adhesive layer.

57. A method as defined in claim 55, wherein said barrier layer comprises a flexible sheet.